

Karma:

A semantic modeling tool to visualize data with
ontologies

Dong Joon Lee, PhD

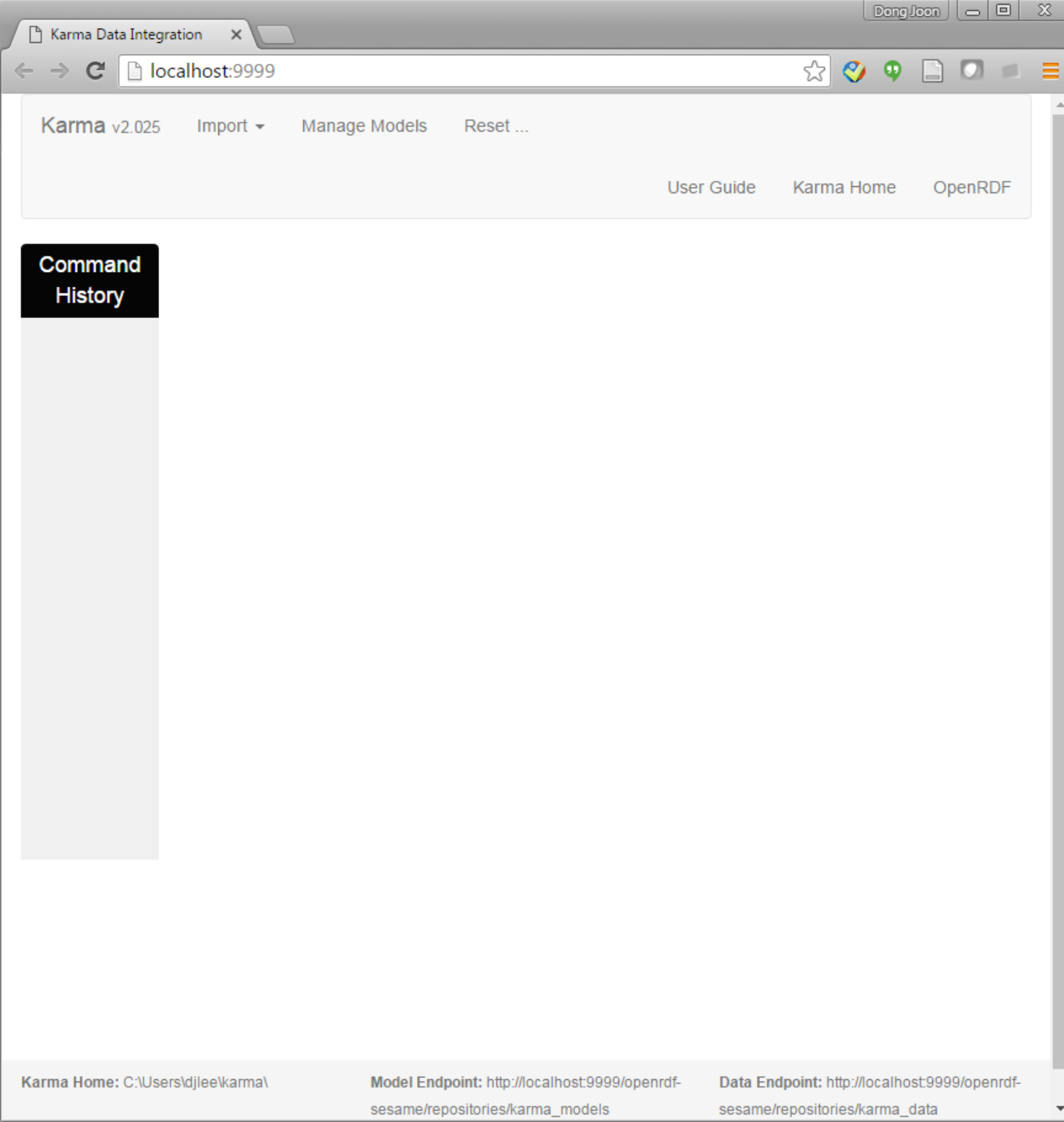
Researcher Information Systems Librarian

Texas A&M University Libraries

May 24, 2016

Data Modelling

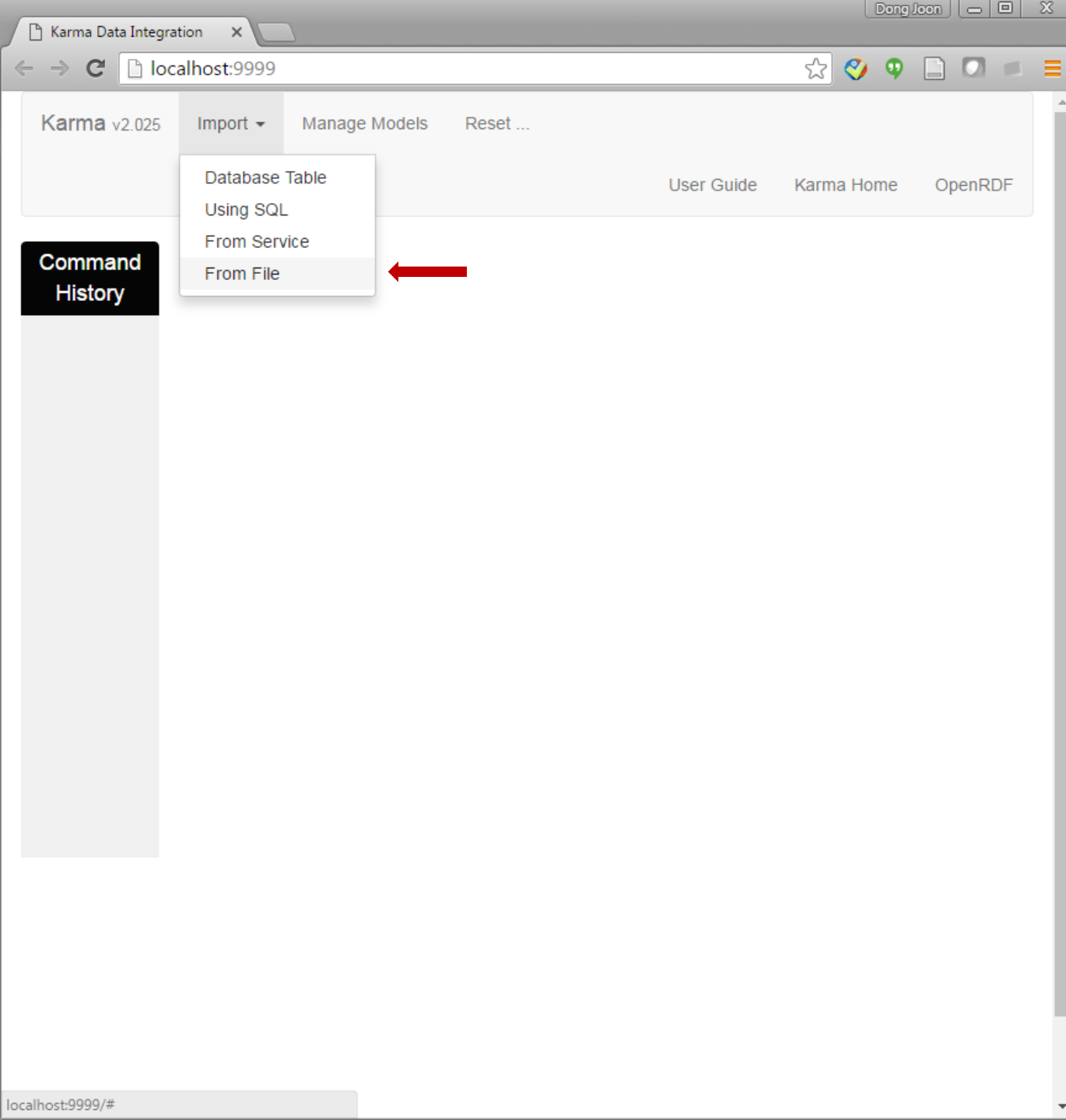
- Using Karma Data Integration Tool



Karma: a data integration tool

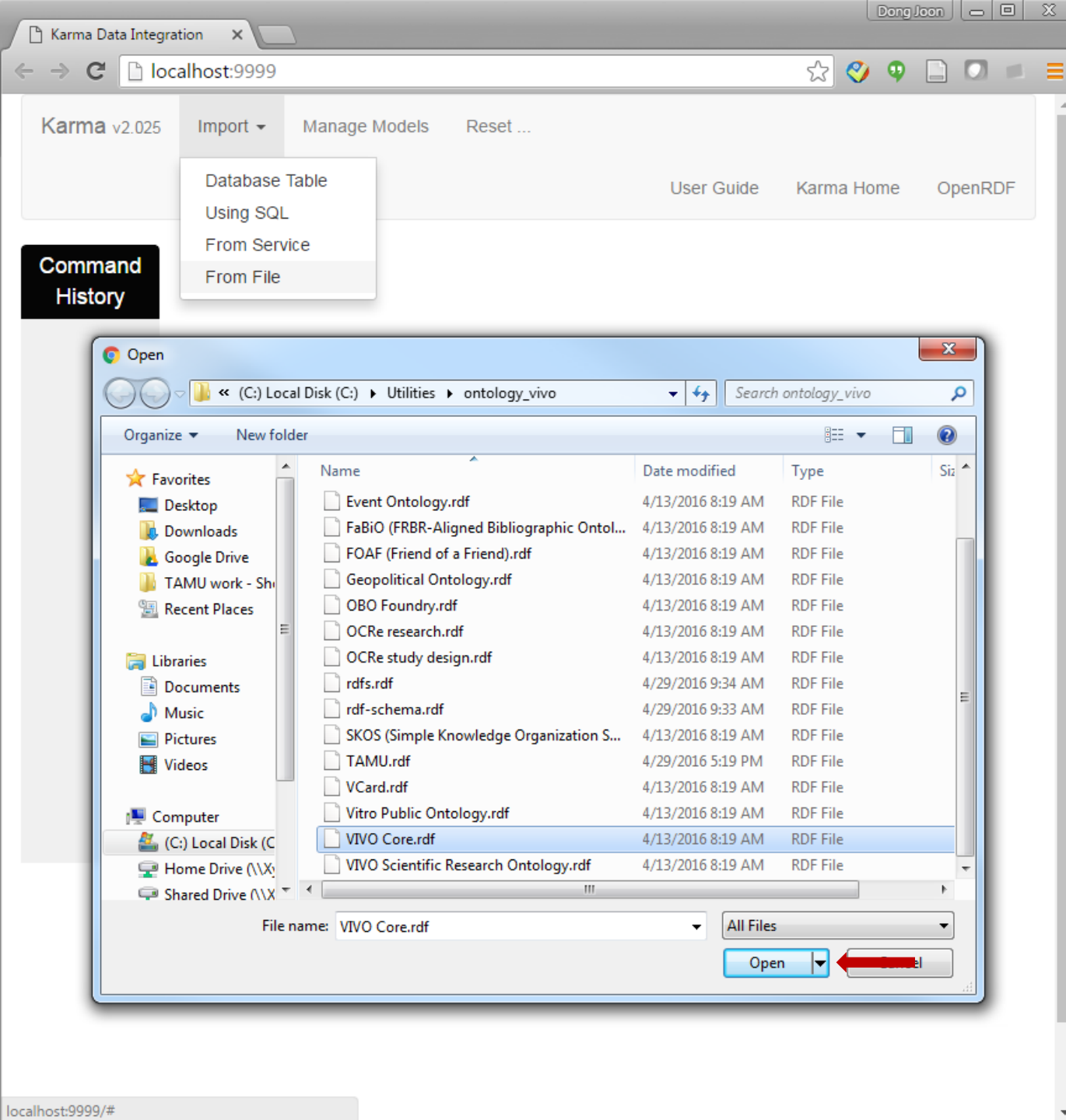
- A semantic modeling tool to visualize data with ontologies

More sources: Duraspace VIVO wiki,
<https://wiki.duraspace.org/display/VIVO/Using+the+Karma+data+integration+tool>



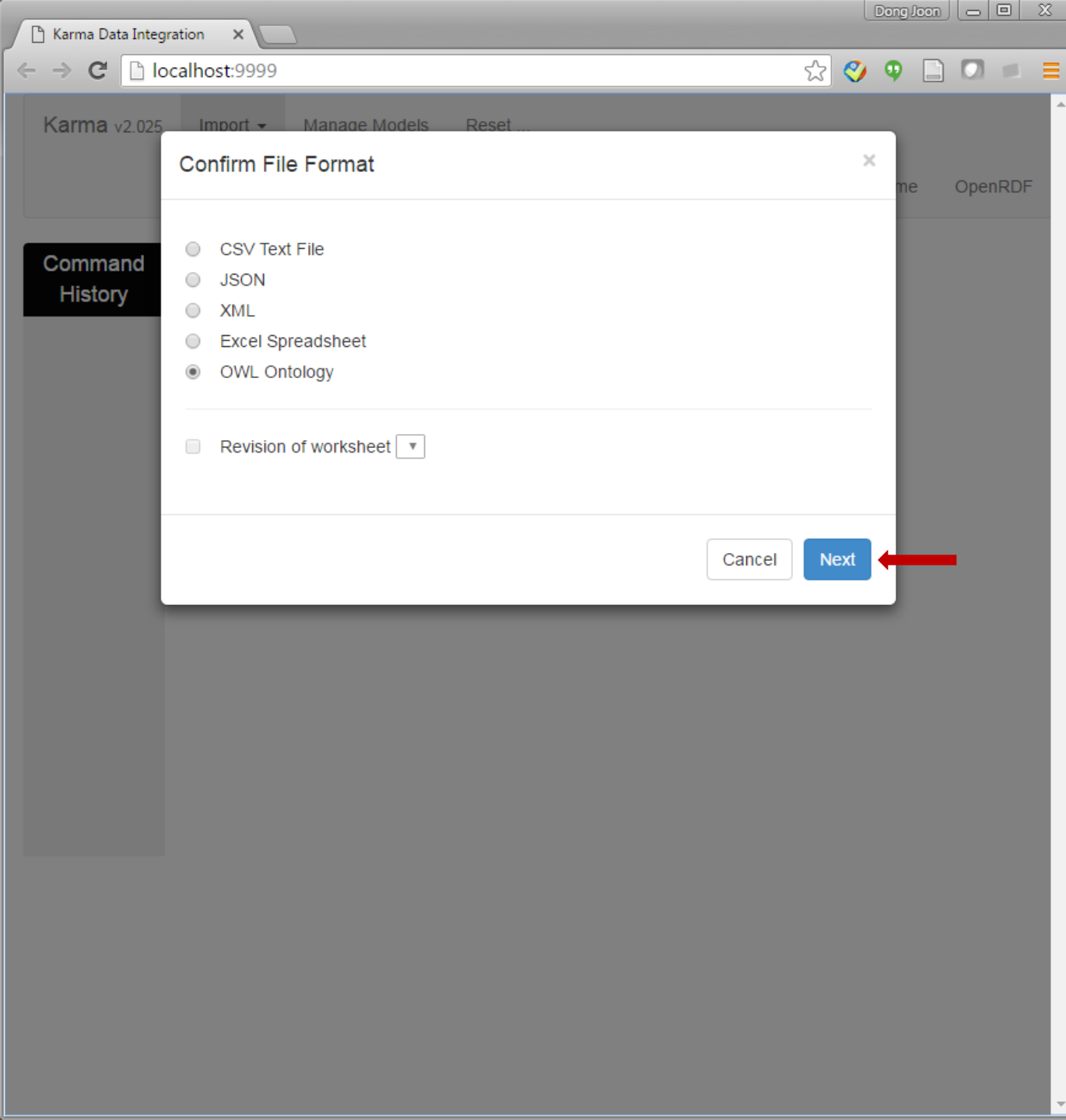
Karma: a data integration tool

- Import ontologies



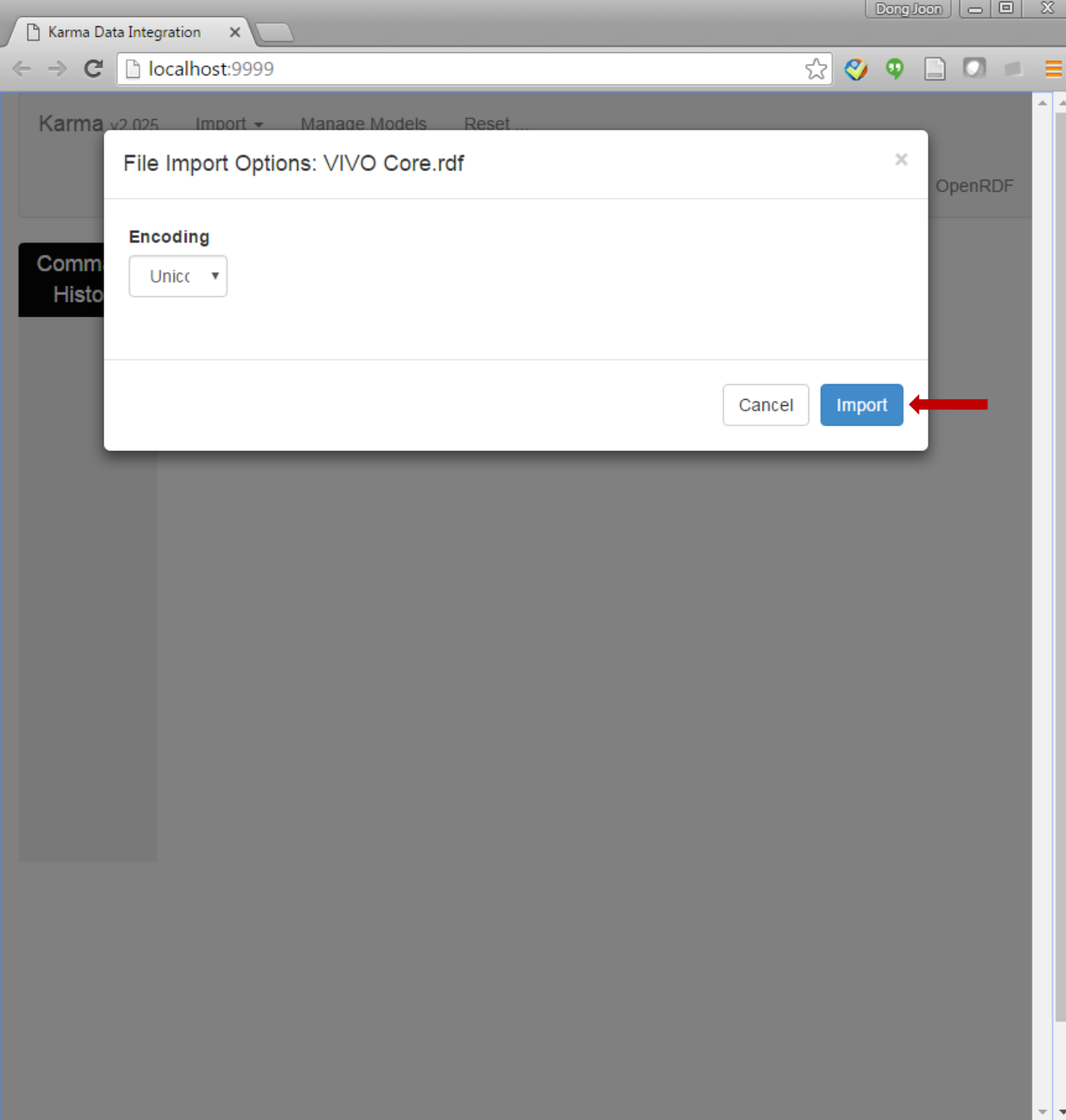
Karma: a data integration tool

- Select ontology and click “Open”



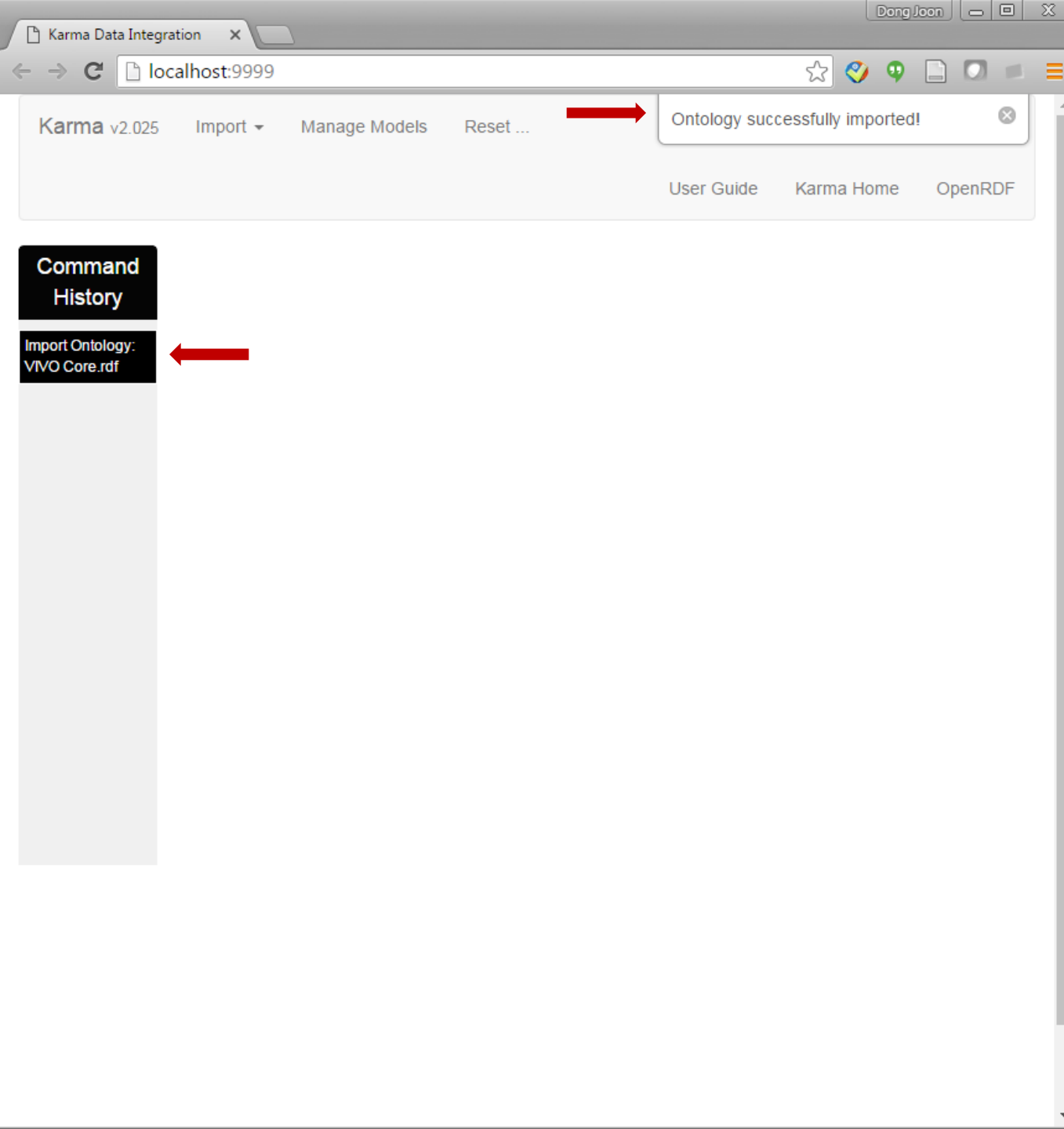
Karma: a data integration tool

- Confirm file format and click “Next”



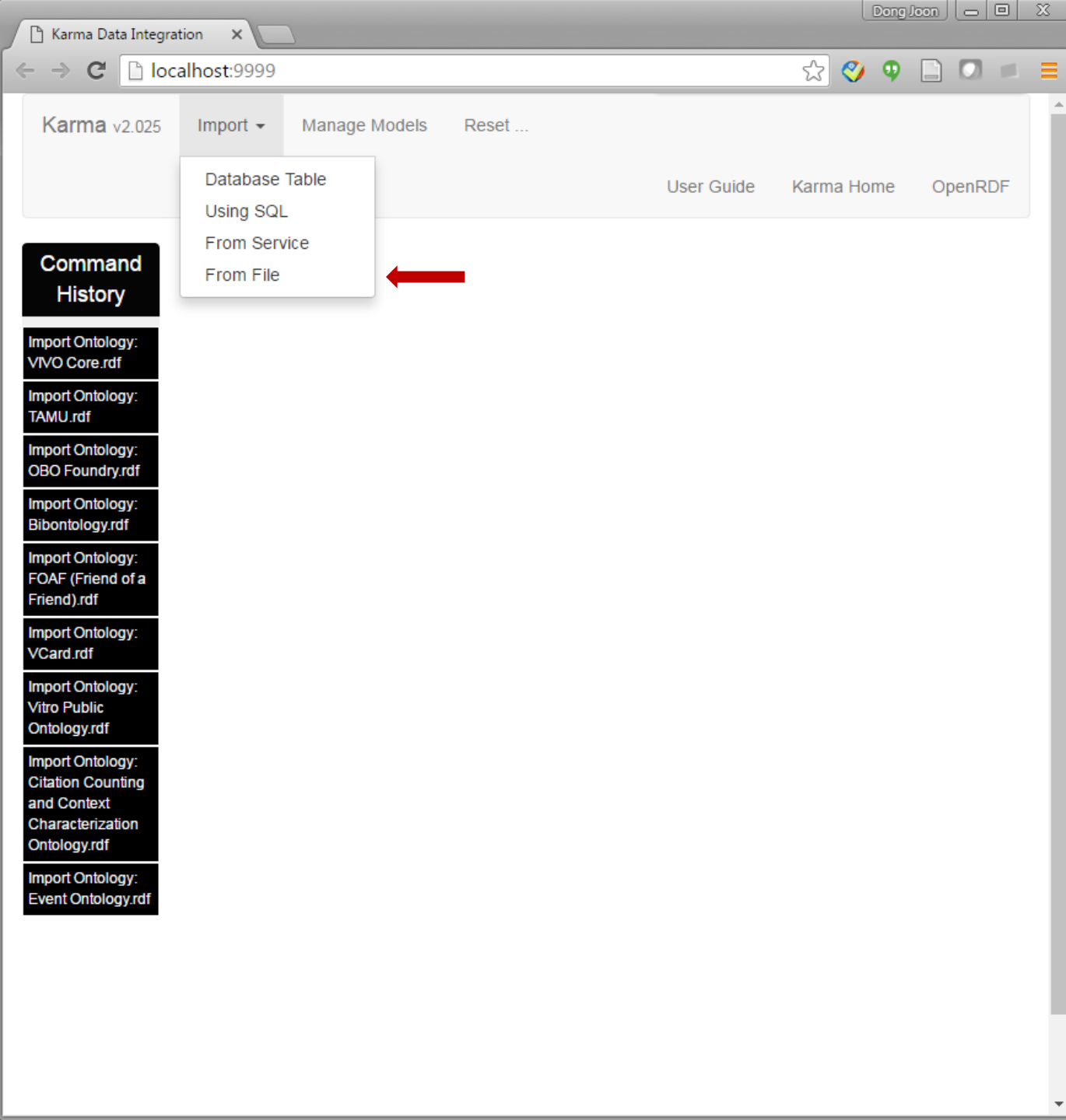
Karma: a data integration tool

- Check encoding and click “Import”



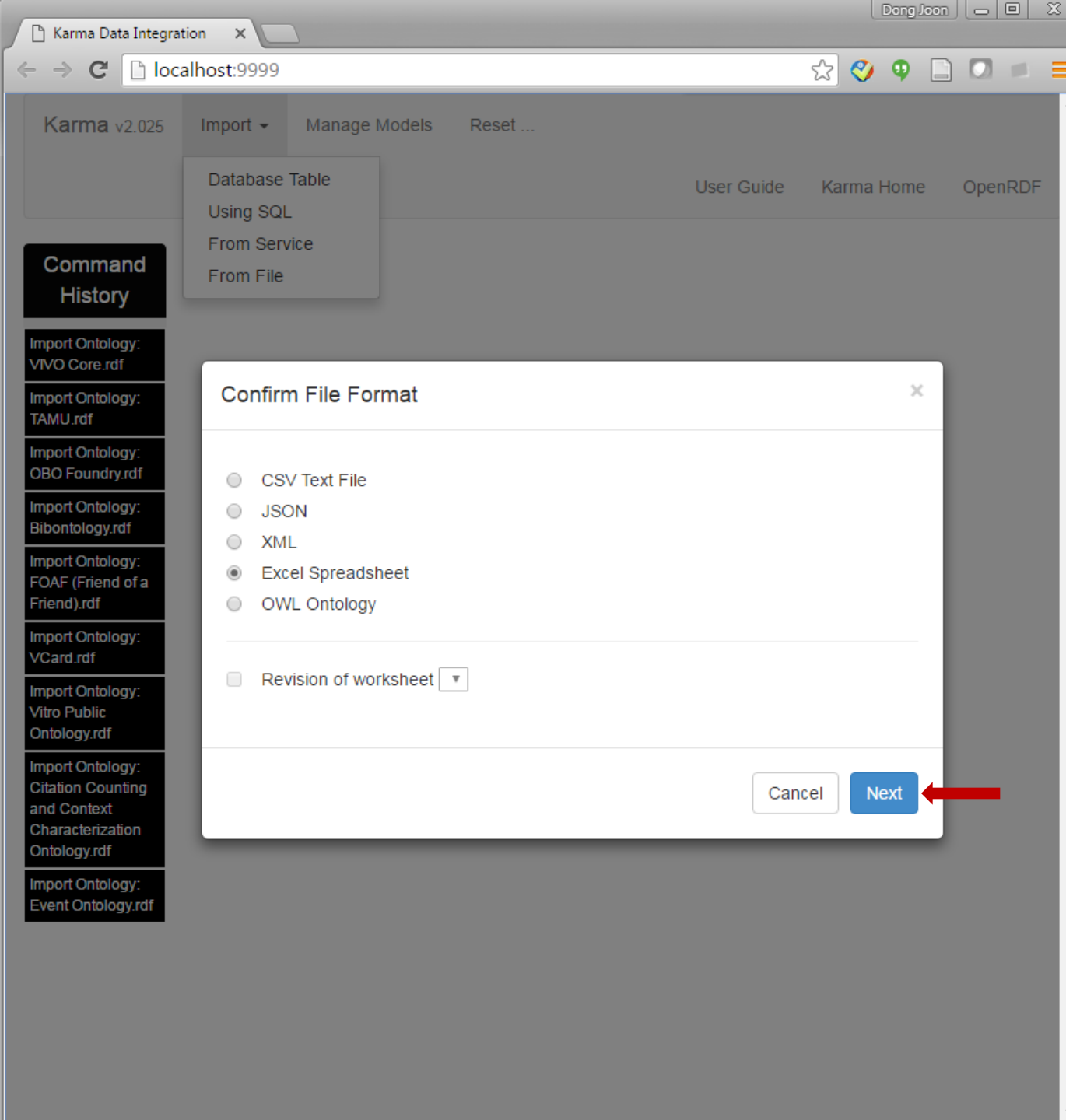
Karma: a data integration tool

- Ontology imported!



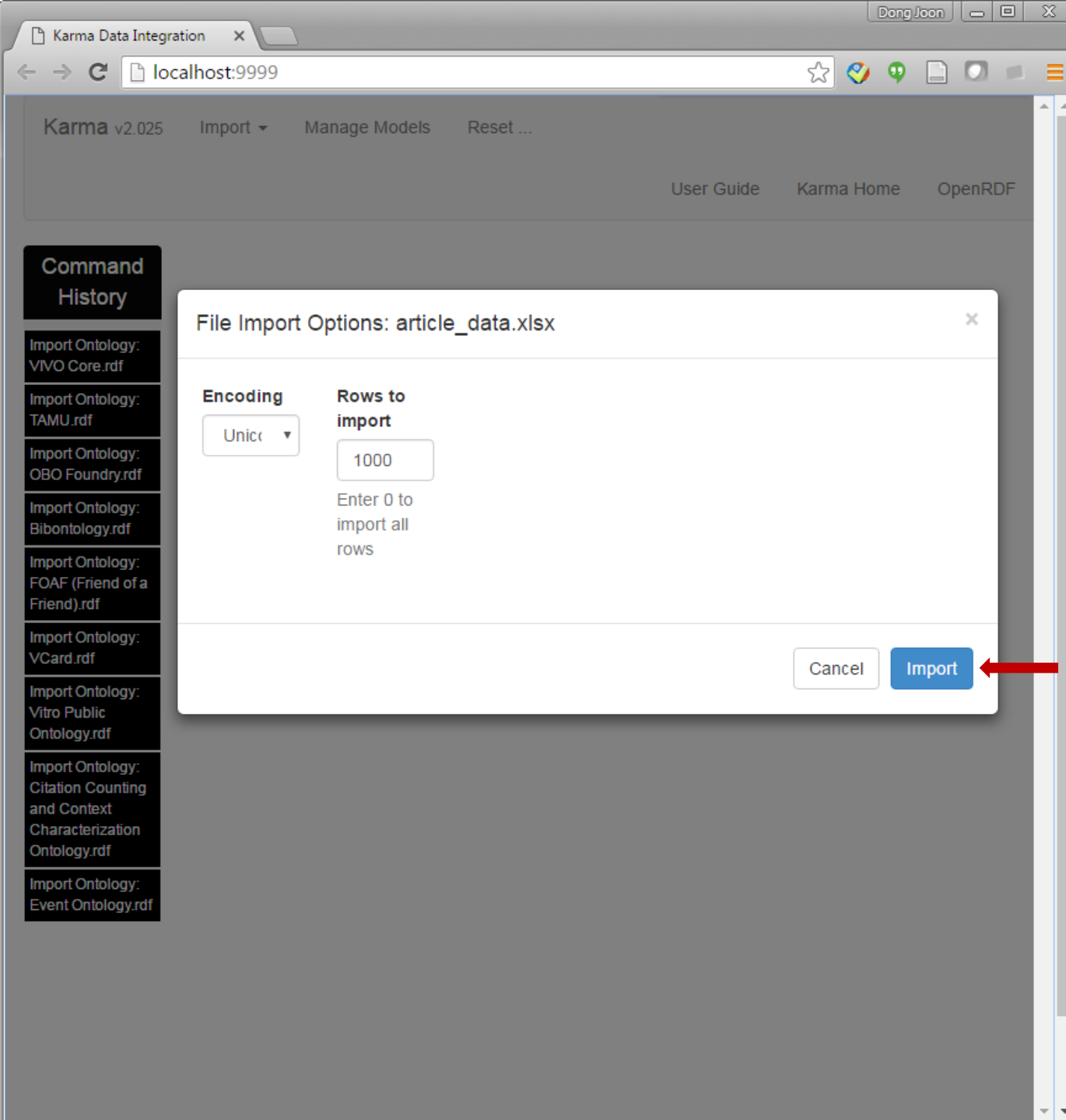
Karma: a data integration tool

- Import data



Karma: a data integration tool

- Select file and click “Open”
- Confirm file format and click “Next”



Karma: a data integration tool

- Click “Import”

Karma Data Integration

localhost:9999

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- Data imported!
 - Simplified article data

Karma Data Integration

localhost:9999

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

ID	UID	Title	Year
uri879		Pyrene sorption by water-soluble organic carbon	2013

Set Semantic Type

- Add Column
- Rename
- Split Column
- Add Row
- Extract Entities
- PyTransform
- Transform
- Invoke Service
- Group By
- Unfold
- Fold
- Glue Columns

Karma: a data integration tool

- Click arrow next to ID
- Click “Set Semantic Type” to model semantic relationship between article and its author(s)

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

localhost:9999

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

ID UID Title Year

uri

Set Semantic Type for: ID

Semantic Types:

	Primary	
<input checked="" type="checkbox"/> uri of Class	<input checked="" type="radio"/>	Edit
<input type="checkbox"/> property of Class	<input type="radio"/>	Edit

Add synonym Semantic Type

☐ Mark as key for the class

Literal Type:

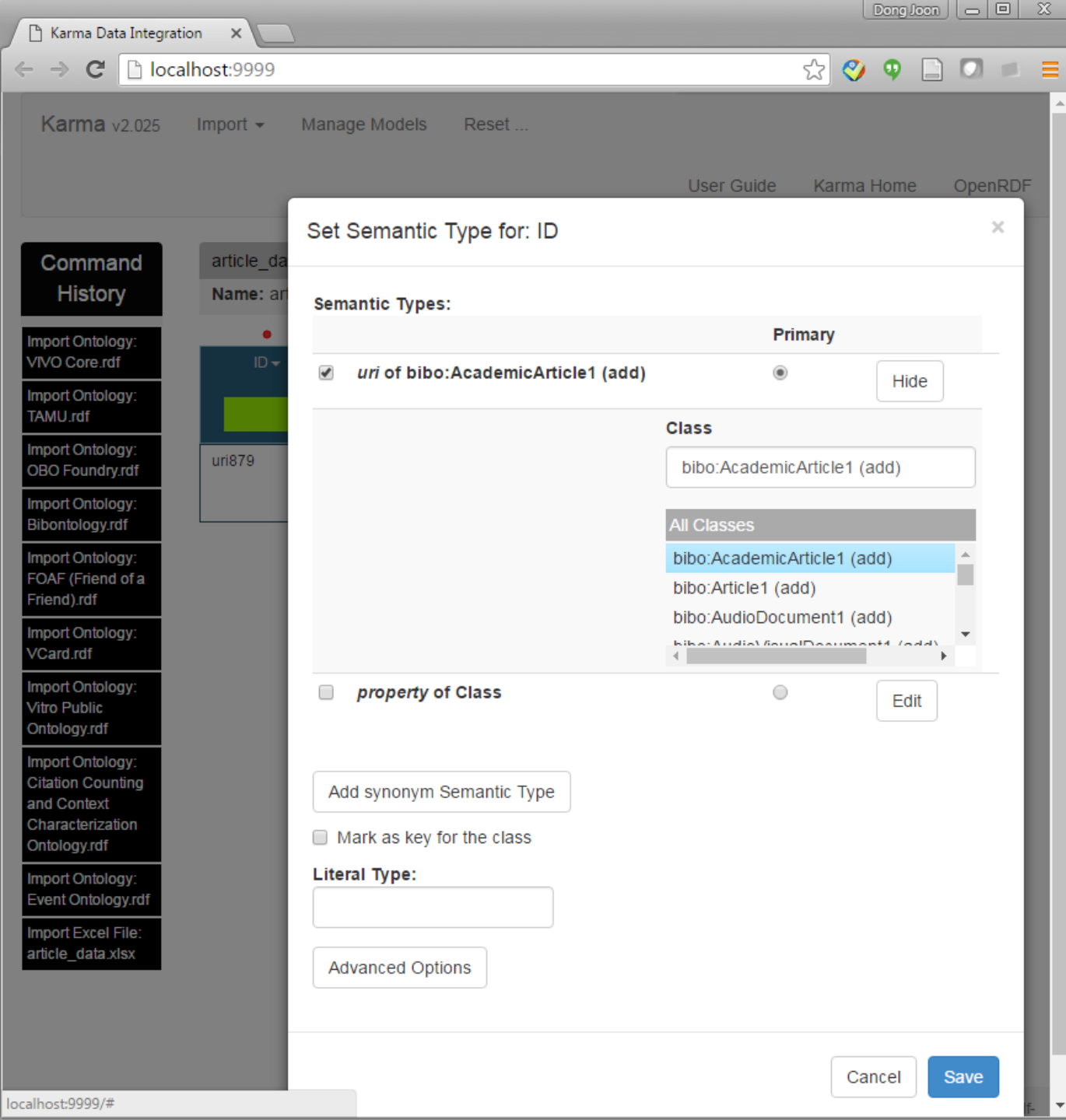
Advanced Options

Cancel Save

Karma Home: C:\Users\djlee\karma\ Model Endpoint: http://localhost:9999/openrdf- Data Endpoint: http://localhost:9999/openrdf-

Karma: a data integration tool

- Click “*uri of Class*”
(ID: Primary key for the article)
- Then click “Edit”



Karma: a data integration tool

- Select ontology class
 - bibo:AcademicArticle1 (add)
- Click “Save”

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

Import Ontology: VIVO Core.rdf

Import Ontology: TAMU.rdf

Import Ontology: OBO Foundry.rdf

Import Ontology: Bibontology.rdf

Import Ontology: FOAF (Friend of a Friend).rdf

Import Ontology: VCard.rdf

Import Ontology: Vitro Public Ontology.rdf

Import Ontology: Citation Counting and Context Characterization Ontology.rdf

Import Ontology: Event Ontology.rdf

Import Excel File: article_data.xlsx

Set Semantic Type (MetaProperty): ID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

AcademicArticle

uri

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma Home: C:\Users\djlee\karma\ Model Endpoint: http://localhost:9999/openrdf- Data Endpoint: http://localhost:9999/openrdf-

Karma: a data integration tool

- Now you set ID as URI of Academic Article class

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

AcademicArticle

uri

ID	UID	Title	Year
uri879	uri213	Pyrene s by water organic c	

Set Semantic Type

- Add Column
- Rename
- Split Column
- Add Row
- Extract Entities
- PyTransform
- Transform
- Invoke Service
- Group By
- Unfold
- Fold
- Glue Columns

localhost:9999/#

Karma: a data integration tool

- Make relationship between Title and Academic Article class
 - Click “Set Semantic Type”

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

localhost:9999/#

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Set Semantic Type for: Title

Semantic Types:

	Primary	
<input type="checkbox"/> <i>rdfs:label</i> of <i>bibo:AcademicArticle1</i>	<input type="radio"/>	Edit
<input type="checkbox"/> <i>vcard:title</i> of <i>bibo:Thesis1</i> (add)	<input type="radio"/>	Edit
<input type="checkbox"/> <i>uri</i> of Class	<input type="radio"/>	Edit
<input checked="" type="checkbox"/> <i>property of Class</i>	<input checked="" type="radio"/>	Edit

Add synonym Semantic Type

☐ Mark as key for the class

Literal Type:

Advanced Options

Cancel Save

Karma: a data integration tool

- Click “*property of Class*” and then “Edit”

Karma v2.025

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID

localhost:9999/#

Semantic Types:

<input type="checkbox"/>	<i>rdfs:label</i> of <i>bibo:AcademicArticle1</i>	<input type="radio"/>	Edit
<input type="checkbox"/>	<i>vcard:title</i> of <i>bibo:Thesis1</i> (add)	<input type="radio"/>	Edit
<input type="checkbox"/>	<i>uri</i> of <i>Class</i>	<input type="radio"/>	Edit
<input checked="" type="checkbox"/>	<i>rdfs:label</i> of <i>bibo:AcademicArticle1</i>	<input checked="" type="radio"/>	Hide

Property

Class

Properties of Selected Class
bibo:abstract
bibo:doi
bibo:issue
bibo:pmid

Classes with Selected Property
none

All Properties
rdfs:label
vivo:termLabel

All Classes
bibo:AcademicArticle1
bibo:AcademicArticle2 (add)
vivo:AcademicDegree1 (add)

Add synonym Semantic Type

☐ Mark as key for the class

Literal Type:

Advanced Options

Cancel Save

Karma: a data integration tool

- Select class and property
 - Class: *bibo:AcademicArticle1*
 - Property: *rdfs:label*
- Click “Save”

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

AcademicArticle1

uri label

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- You have relationship between title and Academic Article class
- Make relationship between year and Academic Article class
 - Class: bibo:AcademicArticle1
 - Property: vivo:dateTime

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

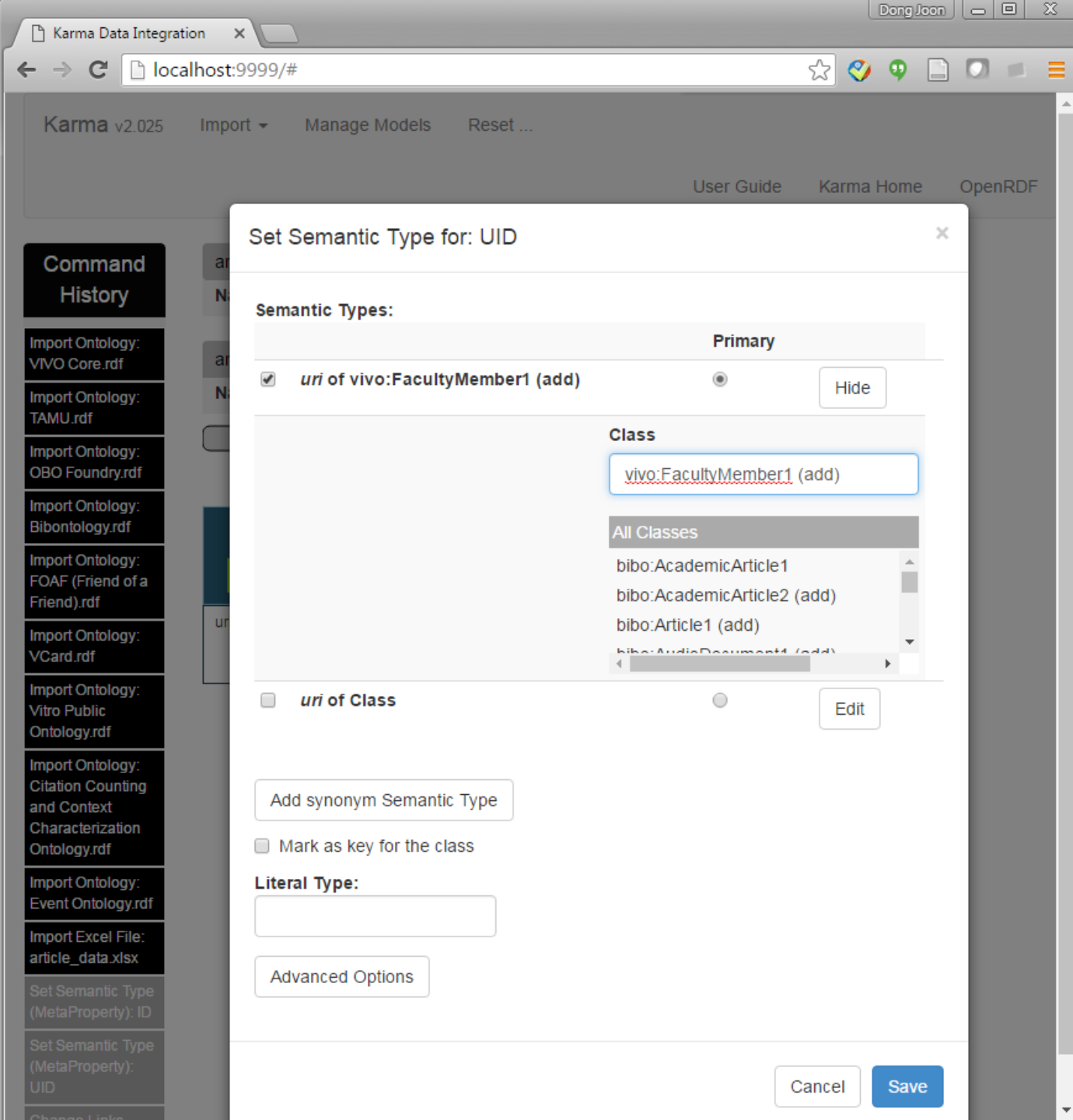
AcademicArticle1

uri label dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- Make relationship between year and Academic Article class
 - Class: bibo:AcademicArticle1
 - Property: vivo:dateTime



Karma: a data integration tool

- Make relationship on Faculty Member
 - UID is a uri of Faculty Member class

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

Import Ontology: VIVO Core.rdf

Import Ontology: TAMU.rdf

Import Ontology: OBO Foundry.rdf

Import Ontology: Bibontology.rdf

Import Ontology: FOAF (Friend of a Friend).rdf

Import Ontology: VCard.rdf

Import Ontology: Vitro Public Ontology.rdf

Import Ontology: Citation Counting and Context Characterization Ontology.rdf

Import Ontology: Event Ontology.rdf

Import Excel File: article_data.xlsx

Set Semantic Type (MetaProperty): ID

Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

translatorOf

AcademicArticle1

uri label dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- You have uri for Faculty Member class
- Karma automatically gives you a relationship between Faculty Member and Academic Article, but this is a wrong relationship
- You need to fix the relationship (translatorOf) later

Karma Data Integration

localhost:9999/#

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Links
- Change Links
- Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

translatorOf

AcademicArticle1

uri uri label dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

uri879 uri213 Pyrene sorption by water-soluble organic carbon 2013

Add Incoming Link

Add Outgoing Link

Manage Links

Augment Data

Export CSV

Export JSON

Invoke Table Service

localhost:9999/#

Karma: a data integration tool

- To make a relationship between Faculty and Article classes, you need Authorship class
 - Click arrow at right side of the Article class
 - Click Manage Links

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Link

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

Incoming-Outgoing Links for: AcademicArticle1

Incoming Links:

from vivo:FacultyMember2 via vivo:translatorOf Delete Edit

Outgoing Links:

Add Incoming Link ~~Add Outgoing Link~~ Cancel Save

Karma: a data integration tool

- You need an incoming link to Article class
 - Click “Add Incoming Link”

Karma Data Integration

localhost:9999/#

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

Import Ontology: VIVO Core.rdf

Import Ontology: TAMU.rdf

Import Ontology: OBO Foundry.rdf

Import Ontology: Bibontology.rdf

Import Ontology: FOAF (Friend of a Friend).rdf

Import Ontology: VCard.rdf

Import Ontology: Vitro Public Ontology.rdf

Import Ontology: Citation Counting and Context Characterization Ontology.rdf

Import Ontology: Event Ontology.rdf

Import Excel File: article_data.xlsx

Set Semantic Type (MetaProperty): ID

Set Semantic Type (MetaProperty): UID

Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

Incoming-Outgoing Links for: AcademicArticle1

Incoming Links:

from	Class	via	property	Delete	Edit
------	-------	-----	----------	--------	------

Outgoing Links:

Add Incoming Link Add Outgoing Link Cancel Save

Karma: a data integration tool

- Click “Edit”

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Link

Incoming-Outgoing Links for: AcademicArticle1

Incoming Links:

from vivo:Authorship1 (add) via vivo:relates Delete Hide

Class	Property
vivo:Authorship1 (add)	vivo:relates
Classes in Model	Compatible Properties
bibo:AcademicArticle1	none
vivo:FacultyMember2	
All Classes	All Properties
vivo:Authorship1 (add)	vivo:relates

Outgoing Links:

Add Incoming Link Add Outgoing Link Cancel Save

Karma: a data integration tool

- Select class and property
 - Class: vivo:Authorship1 (add)
 - Property: vivo:relates
- Click “Save”

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

Authorship1

relates translatorOf

AcademicArticle1

uri uri label dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- Have a relationship between Authorship and Article classes

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

Import Ontology: VIVO Core.rdf

Import Ontology: TAMU.rdf

Import Ontology: OBO Foundry.rdf

Import Ontology: Bibontology.rdf

Import Ontology: FOAF (Friend of a Friend).rdf

Import Ontology: VCard.rdf

Import Ontology: Vitro Public Ontology.rdf

Import Ontology: Citation Counting and Context Characterization Ontology.rdf

Import Ontology: Event Ontology.rdf

Import Excel File: article_data.xlsx

Set Semantic Type (MetaProperty): ID

Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

FacultyMember2

Authorship1

relates translatorOf

AcademicArticle1

uri uri label dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Add Incoming Link

Add Outgoing Link

Manage Links

Augment Data

Export CSV

Export JSON

Invoke Table Service

Karma: a data integration tool

- You need to also make a relationship between Faculty and Authorship classes
 - Click “Manage Links”
 - Click “Add Incoming Link”
 - Click “Edit”
 - Select class and property
 - Class: vivo:Authorship1
 - Property: vivo:relates
 - Click “Delete” for the wrong relationship
 - Click “Save”

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Authorship1

relates

AcademicArticle1

relates

FacultyMember2

uri

uri

label

dateTime

ID	UID	Title	Year
uri879	uri213	Pyrene sorption by water-soluble organic carbon	2013

Karma: a data integration tool

- To look better, you can re-organize the columns
 - Click arrow at next file name
 - Then click “Organize Columns”

Karma Data Integration

localhost:9999/#

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Authorship1

relates

AcademicArticle1

uri label dateTime

FacultyMember2

uri

ID	Title	Year	UID
uri879	Pyrene sorption by water-soluble organic carbon	2013	uri213

Set Semantic Type

Add Column

Rename

Split Column

Add Row

Extract Entities

PyTransform

Transform

Invoke Service

Group By

Unfold

localhost:9999/#

Karma: a data integration tool

- The last step
 - Need to have a *uri* for Authorship class
- Click arrow next to UID and then click “Py Transform”

The screenshot shows the Karma Data Integration tool interface. The main window displays a table with columns for 'Name', 'Prefix', and 'Base URI'. The 'Name' column is set to 'article_data_Sheet1'. The 'Prefix' is 's' and the 'Base URI' is 'http://localhost:8080/source/'.

A dialog box titled 'PyTransform Column' is open, showing the configuration for a new column. The 'Name of new column' is 'Authorship_uri'. The 'On Error' field is empty. The 'View Errors' button is disabled, and the 'Preview results for top 5 rows' button is active. The preview results show the URI 'http://vivo.library.tamu/authorship/nuri879_uri213'.

The dialog box contains the following code:

```
1 return "http://vivo.library.tamu/authorship/n"+getValue("ID")+"_"+getValue("UID").replace(" ", "_")
```

Karma: a data integration tool

- Make a new column of “Authorship_uri”
 - Type the name of new column
 - Create a URI with article id (ID) and faculty id (UID)
 - return
"http://vivo.library.tamu/authorship/n"+getValue("ID")+"_"+getValue("UID").replace(" ", "_")
 - Check the URI by clicking “Preview results for top 5 rows”
 - Then “Save”

Karma v2.025 Import Manage Models Reset ...

User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx

Set Semantic Type (MetaProperty): ID

Set Semantic Type (MetaProperty): UID

Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Authorship1

relates

AcademicArticle1

uri label dateTime

relates

FacultyMember2

uri

ID	Title	Year	UID	Authorship_uri
uri879	Pyrene sorption by water-soluble organic carbon	2013	uri213	http://vivo.library.tamu...

Karma: a data integration tool

- Need to make relationship between Authorship class and its URI

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Authorship1

relates

AcademicArticle1

uri

label

dateTime

FacultyMember2

uri

ID	Title	Year	UID	Authorship_uri
uri879	Pyrene sorption by water-soluble organic carbon	2013	uri213	http://vivo.lib

Set Semantic Type

- Add Column
- Rename
- Split Column
- Add Row
- Extract Entities
- PyTransform
- Transform
- Invoke Service
- Group By
- Unfold

Karma: a data integration tool

- Click “Set Semantic Type”
- Select “*uri* of Class” and Click “Edit”
- Select Class
 - Class: vivo:Authorship1
- Then “Save”

Karma v2.025 Import Manage Models Reset ... User Guide Karma Home OpenRDF

Command History

- Import Ontology: VIVO Core.rdf
- Import Ontology: TAMU.rdf
- Import Ontology: OBO Foundry.rdf
- Import Ontology: Bibontology.rdf
- Import Ontology: FOAF (Friend of a Friend).rdf
- Import Ontology: VCard.rdf
- Import Ontology: Vitro Public Ontology.rdf
- Import Ontology: Citation Counting and Context Characterization Ontology.rdf
- Import Ontology: Event Ontology.rdf
- Import Excel File: article_data.xlsx
- Set Semantic Type (MetaProperty): ID
- Set Semantic Type (MetaProperty): UID
- Change Links

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

article_data_Sheet1 UTF-8

Name: article_data_Sheet1 | Prefix: s | Base URI: http://localhost:8080/source/

Authorship1

relates

AcademicArticle1

uri label dateTime

relates

FacultyMember2

uri

ID	Title	Year	UID	Authorship_uri
uri879	Pyrene sorption by water-soluble organic carbon	2013	uri213	http://vivo.library.tamu...

Karma: a data integration tool

- Done modeling!



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